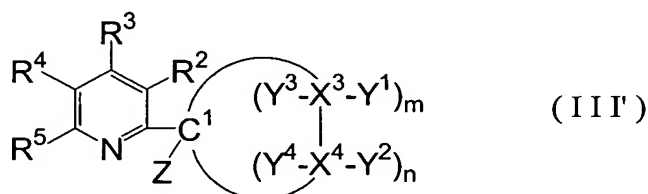


IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A production method of a pyridine derivative having a substituent at the 2-position of a heterocyclic structure, which is represented by the formula (III')



wherein

R², R³, R⁴ and R⁵

are each a hydrogen atom, a halogen atom, an alkyl group optionally having substituent(s), an aryl group optionally having substituent(s), an alkoxyl group optionally having substituent(s), an aryloxy group optionally having substituent(s), an acyloxy group optionally having substituent(s), an alkylthio group optionally having substituent(s), an arylthio group optionally having substituent(s), an acylthio group optionally having substituent(s), a protected amino group optionally having substituent(s), a nitro group, a cyano group, an acyl group optionally having substituent(s), an alkoxycarbonyl group optionally having substituent(s), a carbamoyl group optionally having substituent(s) or a sulfonyl group optionally having substituent(s), or

R² and R³, R³ and R⁴, or R⁴ and R⁵

optionally form, together with a carbon atom bonded thereto, a ring optionally having substituent(s),

m and n

are each an integer of not less than 1, wherein m+n=3 [[-]] to 8,

C¹ is a carbon atom,

Z is a hydrogen atom, an alkyl group optionally having substituent(s) or an aryl group optionally having substituent(s),

X³ is a carbon atom, an oxygen atom, a nitrogen atom or a sulfur atom,

X⁴ is a carbon atom, an oxygen atom, a nitrogen atom or a sulfur atom,

~~provided that~~ wherein at least one of X³ and X⁴ is an oxygen atom, a nitrogen atom or a sulfur atom, when X³ is a nitrogen atom, Y³ bonded to X³ is absent, when X³ is an oxygen atom or a sulfur atom, Y¹ and Y³ are absent, when X⁴ is a nitrogen atom, Y⁴ bonded to X⁴ is absent, and when X⁴ is an oxygen atom or a sulfur atom, Y² and Y⁴ are absent,

Y¹, Y², Y³ and Y⁴

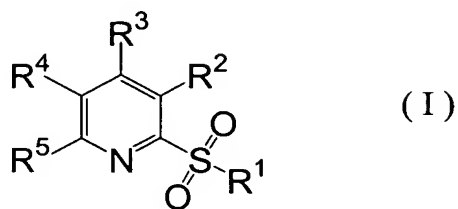
are each a hydrogen atom, a halogen atom, an alkyl group optionally having substituent(s), an aryl group optionally having substituent(s), an alkoxyl group optionally having substituent(s), an aryloxy group optionally having substituent(s), an acyloxy group optionally having substituent(s), an alkylthio group optionally having substituent(s), an arylthio group optionally having substituent(s), an acylthio group optionally having substituent(s), a protected amino group optionally having substituent(s), a nitro group, a cyano group, an acyl group optionally having substituent(s), an alkoxycarbonyl group optionally having substituent(s), a carbamoyl group optionally having substituent(s) or a sulfonyl group optionally having substituent(s), or

Y¹, Y² or Z is optionally bonded to Y¹ or Y², which X³ or X⁴ adjacent to X³, X⁴ or C¹ bonded to Y¹, Y² or Z has, to form a double bond or a ring structure, or

Y¹ and Y³ optionally represent, in combination, an oxygen atom and are optionally bonded to X³ via a double bond, Y² and Y⁴ optionally represent, in combination, an oxygen atom and are optionally bonded to X⁴ via a double bond,

which comprises reacting a 2-sulfonylpyridine derivative represented by the formula

(I)

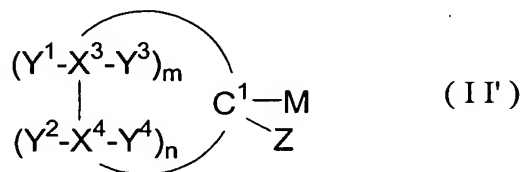


wherein

R^1 is an alkyl group optionally having substituent(s) or an aryl group optionally having substituent(s), and

R^2 , R^3 , R^4 and R^5 are as defined above,

with an organometallic compound represented by the formula (II')



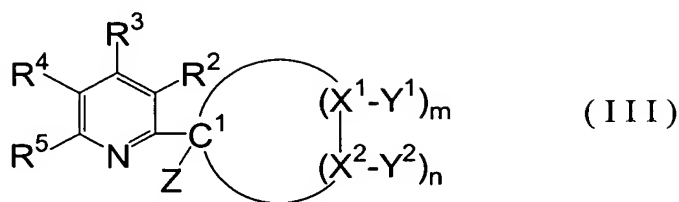
wherein

M is an atom of an element belonging to Group 1, Group 2, Group 12 or Group 13 of the periodic table except a hydrogen atom, and

m , n , C^1 , Z , X^3 , X^4 , Y^1 , Y^2 , Y^3 and Y^4 are as defined above

Claim 2 (Original): The production method of claim 1, wherein Y^1 is bonded to Y^2 , which X^4 adjacent to X^3 bonded to Y^1 has, to form a double bond, and at least one of Y^3 bonded to said X^3 and Y^4 bonded to said X^4 is an alkyl group optionally having substituent(s).

Claim 3 (Currently Amended): A production method of a pyridine derivative having a substituent having a heterocyclic structure at the 2-position, which is represented by the formula (III)



wherein

R^2 , R^3 , R^4 and R^5

are each a hydrogen atom, a halogen atom, an alkyl group optionally having substituent(s), an aryl group optionally having substituent(s), an alkoxy group optionally having substituent(s), an aryloxy group optionally having substituent(s), an acyloxy group optionally having substituent(s), an alkylthio group optionally having substituent(s), an arylthio group optionally having substituent(s), an acylthio group optionally having substituent(s), a protected amino group optionally having substituent(s), a nitro group, a cyano group, an acyl group optionally having substituent(s), an alkoxycarbonyl group optionally having substituent(s), a carbamoyl group optionally having substituent(s) or a sulfonyl group optionally having substituent(s), or

R^2 and R^3 , R^3 and R^4 , or R^4 and R^5

optionally form, together with a carbon atom bonded thereto, a ring optionally having substituent(s),

m and n

are each an integer of not less than 1, wherein $m+n=3$ to 8,

C^1 is a carbon atom,

Z is a hydrogen atom, an alkyl group optionally having substituent(s) or an aryl group optionally having substituent(s),

X^1 is a carbon atom, CH, an oxygen atom, a nitrogen atom or a sulfur atom, and

X^2 is a carbon atom, CH, an oxygen atom, a nitrogen atom or a sulfur atom,

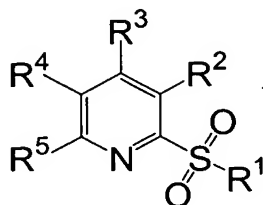
~~provided that~~ wherein at least one of X^1 and X^2 is an oxygen atom, a nitrogen atom or a sulfur atom, when X^1 or X^2 is a carbon atom, CH or a nitrogen atom, Y^1 and Y^2 are each a hydrogen atom, a halogen atom, an alkyl group optionally having substituent(s), an aryl group optionally having substituent(s), an alkoxyl group optionally having substituent(s), an aryloxy group optionally having substituent(s), an acyloxy group optionally having substituent(s), an alkylthio group optionally having substituent(s), an arylthio group optionally having substituent(s), an acylthio group optionally having substituent(s), a protected amino group optionally having substituent(s), a nitro group, a cyano group, an acyl group optionally having substituent(s), an alkoxycarbonyl group optionally having substituent(s), a carbamoyl group optionally having substituent(s) or a sulfonyl group optionally having substituent(s), and

Y^1 , Y^2 or Z

is optionally bonded to Y^1 or Y^2 , which X^1 or X^2 adjacent to X^1 , X^2 or C^1 bonded to Y^1 , Y^2 or Z has, to form a double bond or a ring structure, or when X^1 or X^2 is a carbon atom, Y^1 or Y^2 shows an oxygen atom and is optionally bonded to X^1 or X^2 via a double bond,

which comprises reacting a 2-sulfonylpyridine derivative represented by the formula

(I)



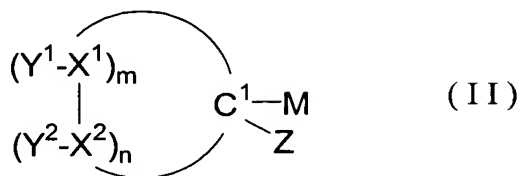
(I)

wherein

R^1 is an alkyl group optionally having substituent(s) or an aryl group optionally having substituent(s), and

~~R^2 , R^3 , R^4 and R^5 are as defined above,~~

with an organometallic compound represented by the formula (II)



wherein

M is an atom of an element belonging to Group 1, Group 2, Group 12 or Group 13 of the periodic table except a hydrogen atom, and

~~m, n, C¹, Z, X¹, X², Y¹ and Y² are as defined above.~~

Claim 4 (Original): The production method of claim 3, wherein the organometallic compound (II) has an aromatic heterocycle.

Claim 5 (Original): The production method of claim 4, wherein the aromatic heterocycle is a pyridine ring, a pyrimidine ring, a pyridazine ring, a pyrazine ring, a thiophene ring, a furan ring, a pyrrole ring, an imidazole ring, a pyrazole ring, a thiazole ring, an oxazole ring or an isoxazole ring.

Claim 6 (Original): The production method of any of claims 3 to 5, wherein, in the formula (II), M is a lithium atom, a sodium atom, a potassium atom, a magnesium atom, a calcium atom, a zinc atom, a boron atom or an aluminum atom.

Claim 7 (Original): The production method of any of claims 3 to 5, wherein, in the formula (II), M is a lithium atom or a magnesium atom.

Claim 8 (Currently Amended): The production method of claim 5, ~~any of claims 5 to 7~~, wherein the aromatic heterocycle is a pyridine ring.

Claim 9 (New): The production method of claim 6, wherein the aromatic heterocycle is a pyridine ring.

Claim 10 (New): The production method of claim 7, wherein the aromatic heterocycle is a pyridine ring.